

WHAT IS CLAIMED IS:

1. A method of steering a user to a document needed by the user, the method including:
  - 5 receiving from the user a user query including language;  
determining whether at least one feature in the user query language substantially matches at least concept feature associated with a concept in a plurality of concepts that are pregrouped into a plurality of groups, and in which each concept includes at least one concept feature that is also in at least one document in  
10 a plurality of documents, and in which each document that includes a concept feature is mapped to the concept that includes the concept feature; and  
presenting to the user, if the at least one feature in the user query language substantially matches the at least one concept feature associated with a concept, at least one indication of at least one document associated with the at least one  
15 matched concept.
  2. The method of claim 1, further including presenting to the user at least one indication of the at least one matched concept.
  - 20 3. The method of claim 1, further including:  
presenting to the user at least one indication of at least one related concept to the at least one matched concept;  
receiving from the user a selection of at least one related concept; and  
presenting to the user at least one indication of at least one document  
25 associated with the user-selected related concept.
  4. The method of claim 3, in which the presenting to the user at least one indication of at least one document associated with the user-selected related concept includes presenting to the user the at least one indication of the at least one  
30 document associated with both the user-selected related concept and the at least one matched concept.

5. The method of claim 4, further including presenting to the user at least one indication of the at least one matched concept.

5 6. The method of claim 5, in which the presenting to the user at least one indication of the at least one matched concept and the presenting to the user at least one related concept to the at least one matched concept includes presenting to the user a paired indication of: (1) a matched concept, and (2) a corresponding related concept.

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7. The method of claim 3, further including ranking related concepts.

8. The method of claim 7, in which the presenting to the user at least one indication of at least one related concept to the at least one matched concept  
15 includes presenting to the user ranked indications of related concepts.

9. The method of claim 7, in which the ranking related concepts includes ranking using a number of times that that the related concept was previously-selected by at least one user.

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10. The method of claim 9, further including promoting a related concept in the ranking if a previous selection by the at least one user resulted in an inferred success in returning at least one relevant document.

25 11. A computer-readable medium for performing the method of claim 1.

12. A content provider system for steering a user to a document needed by the user, the system including:

- 30 a user query input to receive a user query including language;  
a plurality of stored documents;

an content organization schema including a plurality of concepts that are pregrouped into a plurality of primary groups, each concept evidenced by at least one concept feature that is also in at least one of the documents, the schema also including a mapping between the documents and the concepts in which each  
5 document that includes a concept feature is mapped to at least one concept evidenced by that concept feature;

an autocontextualization module configured to determine whether at least one feature in the user query language substantially matches at least one concept feature; and

10 a user interface configured to provide to the user at least one document indicator of at least one document mapped to the at least one matched concept, if at least one feature in the user query language substantially matches at least one concept feature.

15 **13.** The system of claim **12**, further including an indicator of the matching at least one concept feature.

**14.** The system of claim **12**, in which the organizational schema further includes at least one derived group storing information about how at least one concept is  
20 related to at least one other concept, and further including:

an indicator to the user of at least one related concept to the at least one matched concept;

a user input for selecting at least one related concept; and

25 in which the at least one document indicator relates to at least one document mapped to both the at least one matched concept and the at least one selected related concept.

**15.** The system of claim **14**, in which the indicator to the user of at least one related concept includes a paired indicator of: (1) a matched concept, and (2) a  
30 related concept corresponding to the matched concept.

16. The system of claim 14, further including a ranking module to rank the related concepts, further including indicators of related concepts that are displayed according to a ranking received from the ranking module.

5 17. The system of claim 16, in which the ranking module ranks related concepts using a number of times that the related concept was previously selected by at least one user.

10 18. The system of claim 17, in which the ranking module further ranks using whether the previous selection by the at least one user resulted in an inferred success in returning at least one relevant document.

19. The system of claim 12, in which the primary groups include Products, Activities, Symptoms, and Objects groups.

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20. The system of claim 19, in which the primary groups include directed acyclical graph (DAG) taxonomies.

20 21. The system of claim 19, in which the organizational schema further includes at least one derived group storing information about how at least one concept is related to at least one other concept, and in which at least one derived group includes at least one of:

an Activities and Objects group, including at least one relationship between an Activities concept and an Objects concept;

25 an Activities and Products group, including at least one relationship between an Activities concept and a Products concept;

a Symptoms and Objects group, including at least one relationship between a Symptoms concept and an Objects concept;

30 a Symptoms and Products group, including at least one relationship between a Symptoms concept and a Products concept; and

a Symptoms and Activities group, including at least one relationship between a Symptoms concept and an Activities concept.

22. The system of claim 21, in which the at least one derived group further includes at least one of:

an Activities and Activities group, including at least one relationship between different Activities concepts;

an Objects and Objects group, including at least one relationship between different Objects concepts;

10 a Symptoms and Symptoms group, including at least one relationship between different Symptoms concepts; and

a Products and Products group, including at least one relationship between different Products concepts.

15 23. The system of claim 21, in which the derived groups further include at least one of:

at least one lexically-similar group, including at least one relationship between lexically similar concepts; and

20 at least one semantically-similar group, including at least one relationship between semantically similar concepts.

24. The system of claim 12, in which the primary groups consist only of Products, Activities, Symptoms, and Objects groups.

25 25. A method of steering a user to a document needed by the user, the method including:

receiving from the user a user query including language;

determining whether at least one feature in the user query language substantially matches at least one concept feature of at least one concept in a plurality of concepts that are pregrouped into a plurality of groups, each concept including as evidence at least one concept feature;

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presenting to the user, if the at least one feature in the user query language substantially matches the at least one concept feature associated with a concept, at least one indication of the at least one matched concept and at least one related concept to the at least one matched concept, the indication of the at least one related concept presented as corresponding to the at least one matched concept to which it is related; and

presenting to the user, if the at least one feature in the user query language substantially matches the at least one concept feature associated with a concept, at least one indication of at least one document associated with the at least one matched concept.

26. The method of claim 25, further including:

receiving from the user a selection of at least one related concept; and presenting to the user at least one indication of at least one document associated with the at least one user-selected related concept.

27. The method of claim 26, in which the presenting to the user at least one indication of at least one document associated with the at least one user-selected related concept includes presenting to the user the at least one indication of the at least one document that is associated with the at least one user-selected related concept and the at least one matched concept.

28. The method of claim 26, further including ranking related concepts, and in which the presenting to the user at least one indication of at least one related concept to the at least one matched concept includes presenting to the user ranked indications of related concepts.

29. The method of claim 28, in which the ranking related concepts includes ranking using a number of times that that the related concept was previously-selected by at least one user.

30. The method of claim 29, further including promoting a related concept in the ranking if a previous selection by a user resulted in an inferred success in returning at least one relevant document.

5 31. A computer-readable medium for performing the method of claim 25.

32. A content provider system for steering a user to a document needed by the user, the system including:

a user query input to receive a user query including language;

10 a plurality of stored documents;

a content organization schema including a plurality of concepts that are pregrouped into a plurality of primary groups, each concept including as evidence a concept feature, the schema also including a mapping between documents and concepts in which each document that includes a concept feature is mapped to the concept that includes the concept feature;

15 an autocontextualization module that determines whether at least one feature in the user query language substantially matches at least one concept feature; and

a user interface including, if the at least one feature in the user query language substantially matches at least one concept feature:

20 at least one indicator of the at least one matched concept;

at least one indicator of the at least one related concept to the at least one matched concept, the indicator of the at least one related concept presented as corresponding to the at least one matched concept to which it is related; and

25 at least one document indicator to the user of at least one document mapped to the at least one matched concept.

33. The system of claim 32, further including a ranking module to rank related concepts, and in which the indicators of related concepts are displayed according to a ranking received from the ranking module.

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34. The system of claim 33, in which the ranking module ranks related concepts to the same matched concept using a number of times that that the related concept was previously selected by a user.

5 35. The system of claim 34, in which the ranking module further ranks using whether the previous selection by a user resulted in an inferred success in returning at least one relevant document.

10 36. A method of steering a user to a document needed by the user, the method including:  
receiving from the user a user query including language;  
determining whether at least one feature in the user query language substantially matches at least one concept feature associated with a concept in a plurality of concepts that are pregrouped into a plurality of primary groups, in which  
15 the primary groups include an Activities group, a Symptoms group, a Products group, and an Objects group, each concept including as evidence at least one concept feature that is also in at least one document in a plurality of documents;  
presenting to the user, if the at least one feature in the user query language substantially matches the at least one concept feature associated with a concept:  
20 at least one indication of at least one related concept to the at least one matched concept; and  
at least one indication of at least one document associated with the at least one matched concept.

25 37. The method of claim 36, in which the related concept is obtained from a derived group mapping relationships between primary group concept nodes from the same or different primary groups.

30 38. The method of claim 37, further including obtaining a related concept to the at least one matched concept from a derived group that includes at least one of:



an Activities and Objects group, including at least one relationship between an Activities concept and an Objects concept;

an Activities and Products group, including at least one relationship between an Activities concept and a Products concept;

5 a Symptoms and Objects group, including at least one relationship between a Symptoms concept and an Objects concept;

a Symptoms and Products group, including at least one relationship between a Symptoms concept and a Products concept; and

10 a Symptoms and Activities group, including at least one relationship between a Symptoms concept and an Activities concept.

39. The method of claim 37, further including obtaining a related concept to the at least one matched concept from a derived group that includes at least one of:

15 an Activities and Activities group, including at least one relationship between different Activities concepts;

an Objects and Objects group, including at least one relationship between different Objects concepts;

20 a Symptoms and Symptoms group, including at least one relationship between different Symptoms concepts; and

a Products and Products group, including at least one relationship between different Products concepts.

40. The method of claim 37, further including obtaining a related concept to the at least one matched concept from a derived group that includes at least one of:

25 at least one lexically-similar group, including at least one relationship between lexically similar concepts; and

at least one semantically-similar group, including at least one relationship between semantically similar concepts.

30 41. The system of claim 36, in which the primary groups consist only of Products, Activities, Symptoms, and Objects groups.

42. A computer-readable medium for performing the method of claim 36.

43. A content provider system for steering a user to a document needed by the  
5 user, the system including:

a user query input to receive a user query including language;

a plurality of stored documents;

a content organization schema including a plurality of concepts that are  
pregrouped into a plurality of primary groups that include an Activities group, a  
10 Symptoms group, a Products group, and an Objects group, each concept including  
as evidence a concept feature that is also in at least one document in a plurality of  
documents, the schema also including a mapping between documents and concepts  
in which each document that includes a concept feature is mapped to the concept  
that includes the concept feature;

15 an autocontextualization module that determines whether at least one feature  
in the user query language substantially matches at least one concept feature; and

a user interface including, if the at least one feature in the user query  
language substantially matches the at least one concept feature:

20 at least one indicator of at least one related concept to the at least one  
matched concept; and

at least one document indicator to the user of at least one document  
mapped to the at least one matched concept.

44. The system of claim 43, in which the organizational schema further includes  
25 at least one derived group that is derived from at least one primary group and that  
maps relationships between different concept nodes, and in which the at least one  
derived group includes at least one of:

an Activities and Objects group, including at least one relationship between  
an Activities concept and an Objects concept;

30 an Activities and Products group, including at least one relationship between  
an Activities concept and a Products concept;

a Symptoms and Objects group, including at least one relationship between a Symptoms concept and an Objects concept;

a Symptoms and Products group, including at least one relationship between a Symptoms concept and a Products concept; and

5 a Symptoms and Activities group, including at least one relationship between a Symptoms concept and an Activities concept.

**45.** The system of claim **44**, in which the at least one derived group includes at least one of:

10 an Activities and Activities group, including at least one relationship between different Activities concepts;

an Objects and Objects group, including at least one relationship between different Objects concepts;

15 a Symptoms and Symptoms group, including at least one relationship between different Symptoms concepts; and

a Products and Products group, including at least one relationship between different Products concepts.

**46.** The system of claim **44**, in which the at least one derived group further includes at least one of:

20 at least one lexically-similar group, including at least one relationship between lexically similar concepts; and

at least one semantically-similar group, including at least one relationship between semantically similar concepts.

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**47.** The system of claim **43**, in which the primary groups consist only of Products, Activities, Symptoms, and Objects groups.

**48.** A method of building a content provider system for steering a user to a document needed by the user, the method including:

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extracting candidate features from a document corpus of documents;

selecting, from the candidate features, concept features to serve as evidence for corresponding concept nodes organized in primary groups;

categorizing the selected concept nodes and corresponding concept features into the primary groups;

5 mapping the documents to the concept nodes that are evidenced by those concept features that are included in a document being mapped;

determining whether primary group concept nodes are related to other primary group concept nodes; and

10 linking related concept nodes, for presenting, in response to a user query mapping to a particular concept, at least one related concept for modifying at least one constraint on documents returned to the user.

49. The method of claim 48, in which extracting candidate features includes extracting the candidate features from at least one particular region of the  
15 documents.

50. The method of claim 48, in which extracting candidate features includes discarding common features.

20 51. The method of claim 48, in which extracting candidate features includes discarding features used in over a threshold fraction of the documents.

52. The method of claim 48, in which selecting concept features includes selecting as concept features candidate features corresponding to at least one of an  
25 Activities primary group, an Objects primary group, a Symptoms primary group, and a Products primary group.

53. The method of claim 48, in which categorizing the concept nodes includes categorizing the concept nodes into at least one of an Activities primary group, an  
30 Objects primary group, a Symptoms primary group, and a Products primary group.

54. The method of claim 48, in which mapping the documents to the concept nodes includes stemming the concept features and mapping the documents to the concept nodes that are evidenced by those stemmed concept features that are included in a document being mapped.

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55. The method of claim 48, in which determining whether primary group concept nodes are related to other primary group concept nodes includes determining whether a first feature, corresponding to a first concept node, is found near a second feature, corresponding to a second concept node, in at least one of the

10 documents.

56. The method of claim 55, in which determining whether primary group concept nodes are related to other primary group concept nodes includes determining relatedness of at least one of:

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an Activities concept node and an Objects concept node;

an Activities concept node and a Products concept node;

a Symptoms concept node and an Objects concept node;

a Symptoms concept node and a Products concept node;

a Symptoms concept node and an Activities concept node

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a first Activities concept node and a different second Activities concept node;

a first Objects concept node and a different second Objects concept node;

a first Symptoms concept node and a different second Symptoms concept node; and

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a first Products concept node and a different second Products concept node.

57. The method of claim 55, in which determining whether primary group concept nodes are related to other primary group concept nodes includes determining relatedness of at least one of:

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lexically similar concept nodes; and

semantically similar concept nodes.

**58.** The method of claim **48**, further including merging concept nodes.

**59.** The method of claim **48**, further including deleting concept nodes.

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**60.** The method of claim **48**, further including placing a concept feature, associated with a concept node, in a conventional form for display to the user.

**61.** The method of claim **60**, further including determining a conventional form  
10 for the concept node based at least in part on the primary group in which the concept is categorized.

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